

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the *workaday* problems of the bedside doctor. Suggestions of subjects for discussion invited.

PRECORDIAL PAIN

WILLIAM H. LEAKE, M. D. (1930 Wilshire Boulevard, Los Angeles).—Precordial pain, from the medical standpoint, is of considerable importance as it becomes necessary to determine, in many instances, if the pain is a manifestation of grave cardiac disease or is a symptom of minor importance. Angina pectoris or Heberden's angina is a symptom complex which, when observed by the practitioner, is usually unmistakable. This condition may vary in degree from a simple substernal tightness to an agonizing precordial pain, with radiation to the neck, arms, tips of fingers, and even more distant parts. It is usually accompanied by a feeling of impending death. The electrocardiogram may show no abnormal changes, and at autopsy the clinician is often puzzled by the lack of pathologic findings. It is now conceded by various investigators, however, that many of the hearts studied at autopsy reveal some degree of coronary disease. White states that this holds true in at least 95 per cent of the cases.

Coronary artery disease usually produces pain similar in location and radiation to that of angina pectoris, and the severity of the pain depends largely upon the rapidity with which the closure of the artery takes place. In coronary sclerosis, where the narrowing of the lumen is a gradual process, the pain occurs as a rule on exertion, accompanying emotional disturbances, or following dietary indiscretions. Coronary thrombosis, which practically always occurs in a vessel which has undergone sclerotic changes, may cause a most excruciating substernal pain which radiates to the neck, one or both arms, or to the epigastrium. Fever, leukocytosis, and a localized pericardial friction rub are observed often following coronary thrombosis. Patients with pain referred to the epigastrium or gall-bladder region have been subjected to operation because of the resemblance of the symptoms to an acute surgical condition of the abdomen. The electrocardiogram will usually reveal significant changes in the T wave, and disturbances in rhythm are observed frequently. The symptom complex known as angina pectoris is rarely associated with cardiac arrhythmia.

One must remember that aortitis, especially that of luetic origin, acute pericarditis, any form of organic heart disease with or without congestive failure, coarctation of the aorta, and overexertion of a normal heart may produce precordial pain which at times is extremely baffling to the clinician. Inflammatory conditions and neoplasms of the thoracic cavity are responsible occasionally for pain which may be confused with angina pectoris or coronary disease. Lack of space prevents a

more detailed enumeration of conditions which may bring about precordial pain, but a perusal of a paper by Roberts in a recent issue of *The American Heart Journal* will be extremely enlightening.

In this article the discussion has been confined chiefly to precordial pain in angina pectoris and coronary disease. No attempt has been made to take up in detail any of the other numerous causes of precordial pain.

The management of angina pectoris will not be discussed here, aside from stating that the pain of this symptom complex is usually relieved by nitroglycerin or amyl nitrite. Surgical treatment is of value in selected cases.

The pain of coronary disease responds surprisingly well to drugs of the xanthin group. These drugs are thought to act through vasodilatation of the coronary arteries, thereby increasing the heart's blood supply. On this basis, however, it is difficult to explain the disappearance of precordial pain in patients who later come to autopsy showing inflexible "pipe-stem" coronary arteries. Theophyllin (theocin), theophyllin ethyldiamin preparations (euphyllin, metaphyllin), theobromin calcium salicylate (theocalcin), theophyllin calcium salicylate, and theophyllin sodium acetate are the most useful drugs in this group. In the writer's experience the theophyllin preparations have been more effective than the theobromin group. If no improvement is noted in the course of a few days, their use should be discontinued. Theophyllin may be given in the dose of three grains combined with one-half grain of phenobarbital three times daily. The latter drug prevents excessive cerebral stimulation by theophyllin and acts as a mild general sedative. If gastric disturbance is present the theophyllin preparations may be administered rectally in cocoa butter suppositories. Theobromin calcium salicylate is apparently the most satisfactory of the theobromin group; the dose is seven and one-half to twenty grains three times a day, depending upon the response.

The pain of acute coronary thrombosis requires morphin in maximum amount. One-half grain as an initial dose may be required, and the same amount repeated within two or three hours is often necessary. Patients who suffer from this condition apparently have an increased tolerance for opium and its derivatives. It is unnecessary to add that digitalis, caffeine, and epinephrin should be administered freely if indicated. Should the patient survive the sudden occlusion of the artery, the use subsequently of drugs belonging to the xanthin

group will aid in relieving the precordial pain. Rest in bed for a minimum period of four weeks, preferably six, should be required of the patient in order to prevent rupture of the myocardial infarct. Each patient must be considered as an individual problem, and the use of stereotyped instructions is to be avoided.

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WILLIAM J. KERR, M. D. (University of California Hospital, San Francisco).—Our ideas about cardiac pain are changing rapidly. There are many conditions which give pain in the region of the heart, and to the laity and to many practicing physicians the location of the pain in the region of the heart spells cardiac disease and disaster. There is no doubt in my mind that the pain in coronary occlusion originates in the heart or in the envelopes of the heart. Studies of Capps and his associates some years ago are interesting in that it is shown that pain may originate in certain portions of the pericardium, and we have known for a long time that pericarditis will give a very severe precordial pain. It is my feeling, although I have not been able to prove it by experimental study, that the pain in coronary occlusion is probably associated with the inflammatory process in the epicardium situated over an area of infarction, and that probably the heart muscle *per se* is not the seat of origin of pain stimuli. In those cases where coronary occlusion occurs without pain it is likely that the epicardium is not involved or is not involved at a place where sensory-nerve endings are to be found. We are all familiar with the pain which may occur in the region of the heart in abdominal conditions, especially when the left diaphragm is distended or when there are infectious diseases in the biliary tract, or in the presence of duodenal ulcer. If pain is intense enough it may be widely spread.

The previous discussants have mentioned the chief types of pain which may be confused with pain originating in the heart itself, but I should like to emphasize the importance of two types of pain which frequently lead to confusion. In coronary vascular disease it is not uncommon to find the pain referred to the epigastrium, suggesting to the physician that he is dealing with perforating ulcer, with cholelithiasis, or some other acute abdominal disorder. From time to time such patients are operated upon during the height of their symptoms from coronary occlusion. An examination of the heart at such times will usually show the changes in first heart sound and there will often be associated disturbances in rhythm. An electrocardiogram will in such cases be helpful because it will usually show evidences of disturbances in conduction in the ventricles and alterations in the deviation of the T waves. The other condition which may cause confusion is radiculitis associated with lesions of the spinal column or spinal cord. In the last two years approximately three-fourths of all the patients referred to me for a study of the cardiovascular system and treatment for angina pectoris have had radiculitis on the basis of

hypertrophic arthritis of the spine. I am making some special studies in this field at the present time and am not prepared to give a final answer, but I would like to suggest to other members of the profession that when they have patients who complain of pain simulating angina pectoris, they make it a point to examine these patients from time to time when, in many instances, it will be shown that the next time they have pain it will be perhaps in the right shoulder, in the neck with some stiffness, or in the region of the sciatic distribution. Obviously, then, the burden of proof would fall on those who would make a diagnosis of angina pectoris in such a case. Since we have hypertrophic arthritis of the spine and degenerative cardiovascular disease in the same age period, it is difficult sometimes to make the differential diagnosis.

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PHILIP KING BROWN, M. D. (Southern Pacific Hospital, San Francisco).—Beginning with Heberden's description of what has been known since as angina pectoris, down to the separation by Herrick of a group of cases due to coronary thrombosis, and the division of angina into various groups by Mackenzie, there has been a controversy as to just what should be called angina pectoris. Kilgore contributed to the discussion by an article on heart pain, taking Mackenzie's position that a great deal of it was referred pain or a functional neurosis.

Beginning with the operative work on the cervical sympathetic in 1923 by Dr. Walter B. Coffey and the writer, we have taken great pains to distinguish between what we regard as a primary or essential angina pectoris of the Heberden's type, the attacks being extremely severe and accompanied by the sensation of impending death, produced by effort and abated by nitroglycerin, and attacks often quite as severe and possessing all of Heberden's characteristics, not always produced by effort but associated with disease in other parts of the distribution of the pneumogastric nerve and relieved entirely by the cure of the primary exciting cause. Doctor Coffey took the position in the early period of our study of this condition, which might wisely be followed by others who have done the operation, that he would deal surgically with no case until the medical man was convinced that nothing else could be done to relieve the condition. In the Southern Pacific Hospital at San Francisco there has been a distinct rivalry between the medical and surgical services in the interests of efficiency, and very thorough investigations have been made of all cases of precordial pain.

Attacks were relieved in one case of a woman seventy-five years of age by the removal of the gall-bladder with several hundred uniform size small stones. I doubt whether she ever passed a stone, but I am convinced that her typically anginal attacks were precipitated by conditions that held in her gall-bladder. She has never had an attack since it was removed four years ago. That she is potentially a case of angina pectoris I do not doubt, and that she may have a recurrence

of her attacks is not improbable, but her margin of safety was certainly enormously widened by removal of the gall-bladder.

A man of fifty-five years of age had a coronary thrombosis with pericarditis and effort angina. He was in the hospital three times in two years and never was able to do any work in this interval. On his fourth entry he was practically incapacitated. A study of this patient by Dr. Bernard Kaufman of the cardiological department convinced him that the apical adhesions consequent upon the coronary thrombosis and the fixation of the heart bore some relation to the attacks. That he was right was evidenced by the fact that a left phrenicectomy, raising the diaphragm, relieved the patient entirely and he has been back at work over a year. Two cases of persistent duodenal ulcer have had gastroenterostomies with a very marked improvement in the number and severity of attacks where no improvement had taken place before. In both, sympathectomy had to be done before attacks ceased.

The writer is decidedly of the opinion that too much can be expected of the correction of obviously disturbing conditions which seem to bear upon the precordial pain and we have been doomed to disappointment a great many times. The fact remains, however, that angina pectoris occurs with and without coronary disease and is particularly associated with certain individuals, no matter what the coronary condition, while it may be entirely absent in others with very disturbing coronary disease. This symptom complex must be dependent in all cases having actual coronary disease upon some exciting condition not as yet made clear. It seems possible to lessen the likelihood of attacks by improving the general condition through removal of all sources of infection and irritation, especially in parts supplied by the sympathetic. In no case is this more marked than where the anginal attacks are made more frequent in people addicted to the use of tobacco or who have diabetes, where these attacks practically disappear with the correction of the intoxication.

Finally, after a reasonable trial of the correction of all these conditions associated with severe attacks, we published our experience showing that the left superior cervical sympathectomy affords the only sure relief. There is only one type of heart pain simulating angina that we feel should be ruled out and that is, the pain that arises from an involvement of the vertebral nerves in the upper dorsal segment in osteoarthritis of the spine. We have had several cases referred to us relieved entirely by improving the circulation of this part by physiotherapy and braces or by alcohol injection of the vertebral nerves.

Social Insurance.—One of the very first questions that naturally arises is: Have any of our governmental agencies so conducted themselves in the past as to make it reasonably safe for us to entrust so stupendous a function as universal social insurance to any branch or department? I maintain that most of our local as well as state governments are inefficient or corrupt, and some are both.

Let anyone who doubts the correctness of this statement spend a little time to look around with a critical eye and observe how most local governments, the various departments of the state in which he lives, and the departments of the federal government are conducted, and I am convinced that he will find more inefficiency than he has ever dreamed could exist. If he does not personally know of corruption and inefficiency in government, let him but scan one single daily newspaper regularly for a month in order to be convinced. And what else can one expect who is at all familiar with politics as it has been played and managed in these United States in the year 1931—the manner in which most men secure their nominations and later their elections, and to whom they are beholden when they take office?

We have all seen the statement repeatedly in the public press, but have never seen it successfully refuted, that in many of the political subdivisions of our country only 60 per cent of the taxes collected are effectively spent, and the remainder being frittered away, wasted or stolen. This inefficiency and corruption is due to many causes, of which some of the more important are:

The fact that so far no formula has been discovered according to which the most efficient, honest, industrious, and worthy members of the community can be secured for public office. Nor has there been any method devised whereby spoils, politics, favoritism, pull, nepotism, waste, and graft can be eliminated with even a reasonable degree of certainty. The individual who could solve these two problems would not only be the greatest benefactor of the human race, but the wisest man the world has so far produced. Plato tried to solve this problem twenty-three centuries ago when he wrote his Republic. For a time he actually thought he had found a solution. He prevailed upon the King of Syracuse to adopt his plan and put it into operation. The king tried it for a while, tired of it, and sold Plato into slavery. Some good friends ransomed him. After that he was not so sure that his scheme would work in practice. Things are not much different today from what they were in the time of Plato, only worse—worse, because of the increase in population resulting in larger governmental units, the enormous increase in the number of those exercising the franchise, the increase in the percentage number of ignorant voters, and the ever-increasing astuteness and finesse of our practical politicians.

Inefficiency and corruption is so common that we have become callous to it. We are annoyed by it, we grumble and complain mildly about it; we pay our ever-mounting taxes if we have anything with which to pay, and "let it go at that." It almost seems as though we humans had adopted David Harum's dog philosophy and were applying it to ourselves. He said: "A certain amount of fleas is good for a dog. It keeps him from brooding on being a dog."

The best illustration of governmental muddling in general is to be found in the mess most governments of the world have made of themselves during the past twenty years. As examples, we need but call attention to the virtual bankruptcy of Germany and of Austria, the maladministration in Russia, the revolutions in Spain, China, Central and South America, the dictatorships in Poland and Italy, and when we come nearer home, the lawlessness in the United States, with its murders and kidnaping for ransom; conditions in the city of New York as disclosed by the Seabury investigation; the virtual bankruptcy of Chicago and Philadelphia, and the near bankruptcy of many other governmental units.

Let us study conditions in our own country a little more in detail in order to determine whether it would be wise or even safe to entrust the federal, state and local government, or any one of them, with supervision over the private lives of its citizens.—By Dr. Edward H. Ochsner, *Maine Medical Journal*, February, 1932.